Attorney Docket No. 06816-021002
Serial No. 09/654,922
Amendment dated April 16, 2004
Reply to Office Action dated December 16, 2003

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Kindly cancel claim 1 and substitute the following new claims therefor:

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1.   (Cancelled)

2.   (New)   A method, comprising:

forming a two-dimensional array of pixels;

allowing the pixels to receive light representing an image to be detected by allowing the pixels to accumulate light beginning at a first time; and

reading out each of the pixels at least at both of a first shorter integration time, which begins at said first time, and ends at a second time and a second longer integration time, which begins at said first time and ends at a third time subsequent to said first time.

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3.   (New)   A method as in claim 2, further comprising
combining information from the readouts from the first shorter
integration time with information from the readouts from the
second longer integration time, to form a composite readout.

4.   (New)   A method as in claim 2, wherein said reading
out comprises reading out an entire row of pixels at each of
said first shorter integration time and said second longer
integration time.

5.   (New)   A method as in claim 2, wherein said reading
out comprises reading out the pixels into a first buffer
representing the shorter integration time, and reading out the
pixels into a second buffer representing the longer integration
time.

6.   (New)   A method as in claim 2, wherein the pixels
are non-destructively read out, and said reading out comprises
reading out the pixels first at said shorter time and second at
said longer time.

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7.   (New)   A method as in claim 2, wherein said reading

out comprises reading out the pixels from the shorter

integration time into the same buffer.

8.   (New)   A method as in claim 2, further comprising

reading out each of the pixels at a third integration time.

9.   (New)   A method as in claim 1, wherein said pixels

are active pixels.

10.   (New)   A method, comprising:

allowing an array of pixels to receive light representing

an image to be detected; and

reading two separated rows of pixels in each single row

readout process.

11.   (New)   A method as in claim 10, wherein said two

separated rows of pixels represent a first row of pixels

representing the image integration for a shorter integration

time, and a second row of pixels representing the image

integration for a longer integration time.

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12. (New)   A method as in claim 11, wherein said reading comprises non-destructively reading.

13. (New)   A method as in claim 11, wherein said reading comprises destructively reading.

14. (New)   A method as in claim 10, wherein said reads an entire row at each reading time.

15. (New)   A method as in claim 10, further comprising increasing a dynamic range of information obtained from a pixel by combining information from a first pixel with a first integration time and information from said first pixel with a second integration time.

16. (New)   A method as in claim 10, further comprising reading a third row of pixels during each single row readout process.

17. (New)   A method as in claim 13, further comprising carrying out correlated double sampling as part of said reading.

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18. (New)   A method as in claim 11, wherein said

reading comprises reading of each of said rows to a separate

storage area.

19. (New)   A method as in claim 9, wherein said pixels

are active pixels.

20. (New) A system, comprising:

a semiconductor substrate defining a two-dimensional array

of pixels, each of said pixels formed with a photoreceptor

portion therein, and at least one active readout portion

therein,

a readout control part, controlling said pixels to allow

the pixels to receive light representing an image to be

detected, and allowing the pixels to accumulate light for an

integration, and to control the pixels to readout information

from the pixels representative of light reception for a first

integration time, and a second integration time longer than said

first integration time, such that each pixel provides light

output integrated over both of said first and second integration

times.

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21.   (New)   A system as in claim 20, wherein said
readout control part also controls said pixels to accumulate
light for a third integration time.

22.   (New)   A system as in claim 20, further comprising
an image information combiner, which combines information from
the first shorter integration time with information from the
second longer integration time, to produce composite information
about the image.

23.   (New)   A system as in claim 20, further comprising
a first buffer, on the semiconductor substrate, receiving
information indicative of the light integrated for said first
integration time, and a second buffer, receiving information
indicative of the light integrated for the second integration
time.

24.   (New)   A system as in claim 20, further comprising
a buffer receiving information indicative of the light reception
for the first integration time and indicative of the light
reception for the second integration time.

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25.   (New)   A system as in claim 20, further comprising a correlated double sampling system which destructively read out said pixels.

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